

A Science Magazine from CTW, the Creators of Sesame Street.

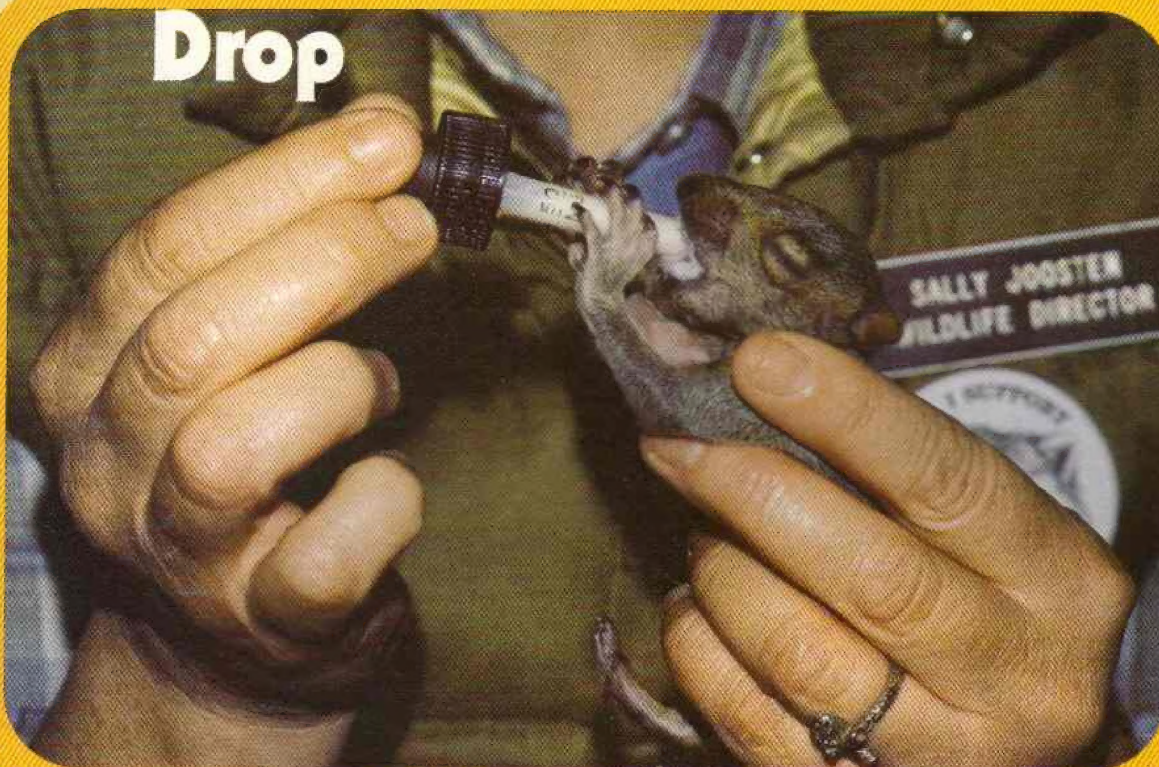
March 1983

321 CONTACT™



Kites to
the
Rescue

Good to the Last Drop



This tiny squirrel is an orphan. Without its parents to feed and take care of it, the little animal would probably die. That's why it is getting this helping hand from Sally Joosten.

Sally is a wildlife rehabilitator. Each year she takes care of hundreds of animals, like this one, which are lost or injured.

To find out more about Sally and the animals she helps, turn to page 22.

Publisher
Nina B. Link
Editor
Andrew Gutelle
Art Director
Al Nagy
Managing Editor
Aura Marrero
Associate Editor
Joanna W. Foley
Assistant Editors
Rebecca Herman
Renée Skelton
Assistant Art Director
Bob Sullivan

RESEARCH
Research Director/
Publications
Madeline Boskey-Olsen
Assistant Research Director
Michele Freck
Researcher
Brian Allen

BUSINESS
Business Manager
John G. Colson
Circulation Director
Betty Anne Fier
Subscription
Fulfillment Manager
Lucille Friedman
Promotion Coordinator
Patricia E. Giassa
Production Manager
Carlos N. Crosbie
Production Coordinator
Linda Manes

ADVISORS
Dr. Gerald S. Lesser
Professor, Harvard
Graduate School
of Education
Dr. Charles Walcott
Director, Lab. of Ornithology
Cornell University
Dr. Jearyl Walker
Professor of Physics
Cleveland State University
Dr. Charles A. Whitney
Professor of Astronomy
Harvard University

CHILDREN'S
TELEVISION WORKSHOP
President
Joan Ganz Cooney
Executive Vice President
David V. B. Britt
President
CTW Products Group
William F. Whaley
Vice President
Executive Producer
David D. Connell
Vice President
Finance and Administration
C. Sue Cushman
Vice President Community
Education Services
Evelyn P. Davis
Vice President
Public Affairs
Robert A. Hatch
Vice President
Production
Alfred Hyslop
Vice President
Research
Dr. Edward L. Palmer

3-2-1 Contact is a publication of the Children's Television Workshop, published six times during the year, monthly except for January and August. © 1993 Children's Television Workshop. All rights reserved. All contents owned by the Children's Television Workshop and may not be reprinted without permission. 3-2-1 Contact is a trademark and a service mark of the Children's Television Workshop. Printed in the U.S.A. Number 24, March, 1993. Editorial offices: 1 Lincoln Plaza, New York, N.Y. 10023. Send subscription orders and change of address notices (including label from cover of magazine) to 3-2-1 Contact, P.O. Box 2935, Boulder, Colorado 80322. Subscriptions: 1 year, U.S.A. \$10.95; Canada and other countries \$14.95. Bulk copy rates to schools and other institutions available on request.

Page 4



Page 8

321 CONTACT

Page 10



Page 12



Page 18



Page 22



Page 28



Featuring This Month

- 4** The Sky's the Limit: New Uses for Kites
- 12** Rain or Shine?:
Be a Weather Predictor
- 20** CONTACT Poster
- 22** A Helping Hand for Wildlife
- 26** Make a Trash Bag Kite
- 28** Geysers: A Game That's
a Real Blast
- 34** The Bloodhound Gang: The Case
of the Electronic Burglar (Part One)

Plus Our Regular Departments

- 6** Factoids
- 10** Any Questions?
- 16** List of the Month: Blowing in the Wind
- 18** Contact Report
- 30** Mail
- 31** Letters
- 32** Reviews & Previews
- 37** Did It!
- 39** Earth Works: Geysers

The Sky's The Limit

NEW USES FOR KITES

by Mark Kindley



Most people agree that kites are fun to fly. Chances are you have flown a kite of your own on a windy March day. But kites are much more than just nifty playthings.

Even simple kites long ago had serious uses. Japanese and Chinese kites were used in war. They were big enough to lift archers up into the sky to shoot at enemy troops. Later in the United States, kites were used to pull carriages before cars were invented. And before TV existed, kites sometimes carried advertising messages to people.

Today, some modern kites are a lot more complicated. They are no longer made of just paper and sticks. Some of these new kites can actually do work for people. One kind will be big as a jet plane. It may be able to harness the wind

Some of today's kites are good for more than just having fun. This shiny one can help to rescue people on boats lost at sea.

and make electricity. Another kind of kite helps to prevent airplane crashes at airports.

Many scientists and engineers are really high on kites these days. Want to know more about these modern miracle kites? Read on.

Kites to the Rescue

Can you imagine ever being lost at sea? In that case, a kite called the rescue wing might be a real lifesaver. It is a thin plastic balloon in the shape of a kite. In the future, if boats or ships run into trouble, passengers can send up a rescue wing. This kite reflects sunlight. The kite will show up on radar over 100 miles (160 km) away. It flies on a 300-foot (90-m) tether. This tether doubles as a radio antenna. You could use it to broadcast a distress signal. The first rescue wing kite was tested over a year ago. It was a success!

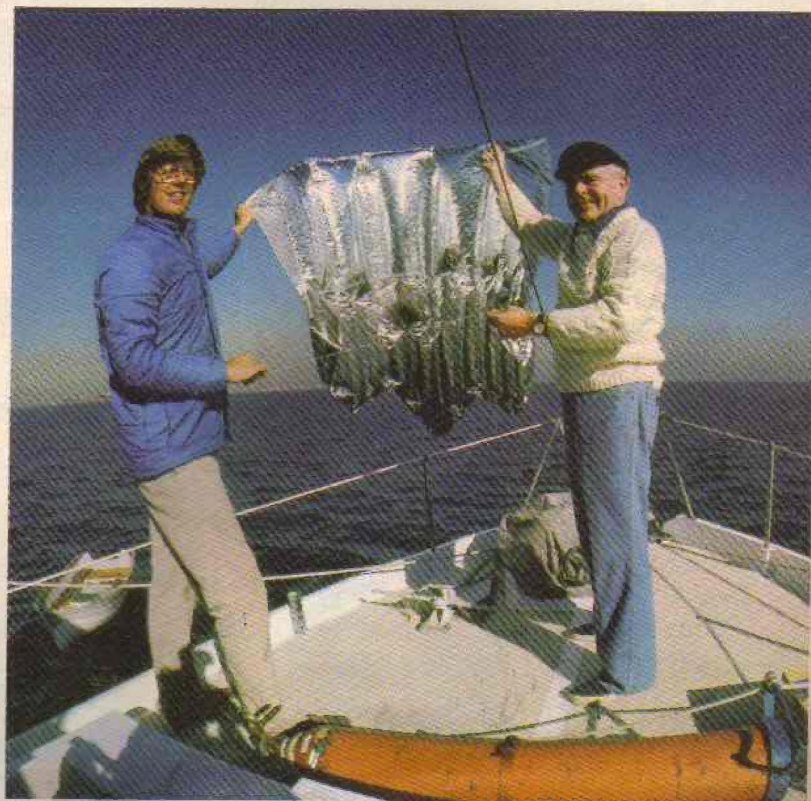
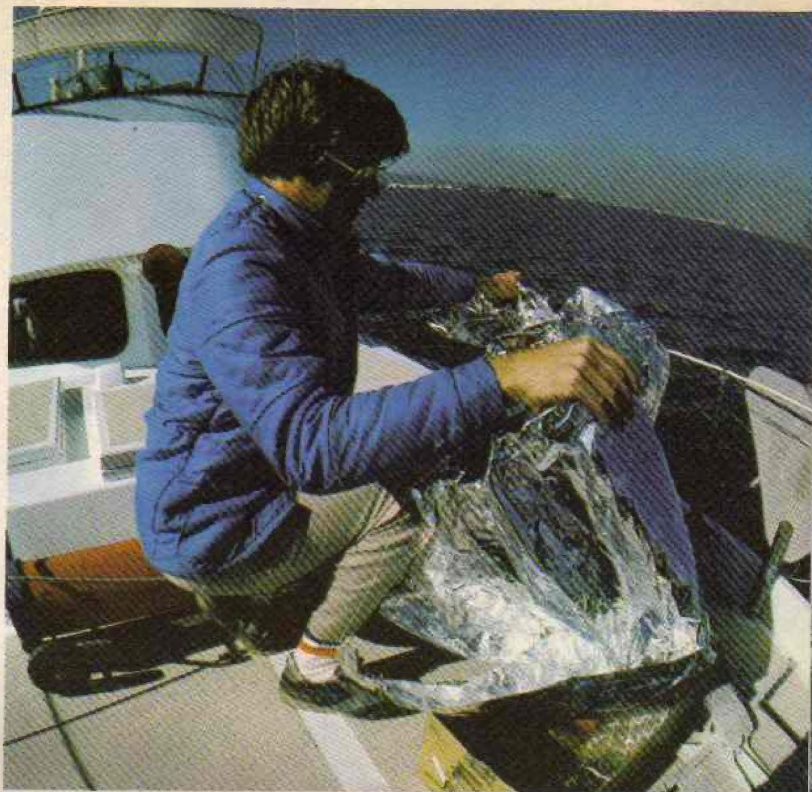
A Balloon Shaped Like a Kite

Kites are also great for studying the weather. For example, the box kite was used to observe weather conditions about 90 years ago. It lifted lots of weather equipment up into the sky. But this kite had one big problem. It couldn't fly when the wind didn't blow. So by the 1920s, weather scientists stopped using kites. Instead, they used balloons filled with a gas called helium. But there was a different problem with balloons. They couldn't fly if there was too much wind. Balloons would simply float away.

So what was the answer? Cross a kite with a balloon! That's exactly what David Kall did. He built a light, plastic-coated balloon in the shape of a kite. As a balloon, it can fly without wind. But since it is also a kite, it flies well even when the wind is strong. David's invention is called a *tethersonde*. Tether is the word for a kite's cord or string that reaches to the ground.

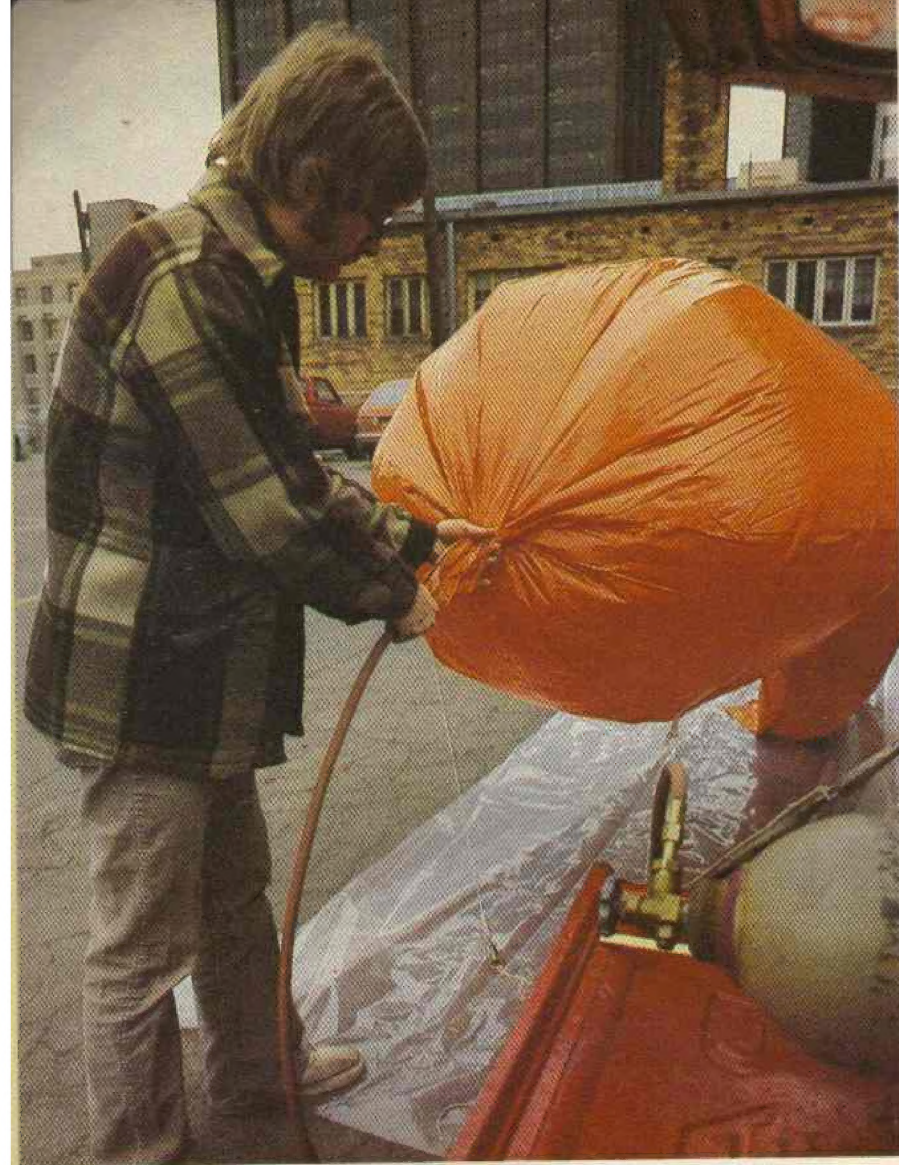
The tethersonde is used to study earth's weather in a special zone. That's anywhere from 100 feet (30 m) off the ground to around 2,000 feet (600 m). Until now, weather scientists were not able to reach this zone easily. It's too high to study from wind towers on the ground and too low to study from airplanes.

Another new kite has even more exciting possibilities for helping people. The TALA kite is used to study a dangerous weather condition around airports. Wind *shear* is the name for cross currents of air that whip around an airport. Wind shear can sometimes cause planes to crash. The TALA kite can help airport officials see which way the wind is blowing. Then planes can avoid flying in dangerous weather. ➡



Top: This kite is called a rescue wing kite. It can be blown up and sent into the sky when people on boats run into trouble. The shiny surface reflects sunlight and shows up on a radar screen.

Above: Bill Watson is helping Eugene Murphy test the rescue wing kite that Murphy designed.



The TALA kite helps people study the wind around industrial plants and nuclear reactors, too. If chemical pollution or radiation ever escaped from these plants, it would be important to know in advance where the wind would carry these dangerous materials.

An Electrifying Idea

Like many kids, David Loyd enjoyed flying kites when he was 12. His father, Miles, also joined in the fun. Miles is an engineer so he was good at designing new kites, too. Soon the kites that he and David built were getting bigger and more sturdy.

Miles would watch David struggling to hold onto the string as they tested each improved new model. He could see that the wind way above the earth had a lot of force. And David could feel that force in his arms as the kite jerked and pulled. Both wondered if there was a way kites could make use of this power. Could kites somehow use wind power to generate electricity?

David and Miles set out to prove it could be done. Miles worked out the designs on their home computer. David built the kites, using his father's plans. Then it was his job to give the new models a test flight.

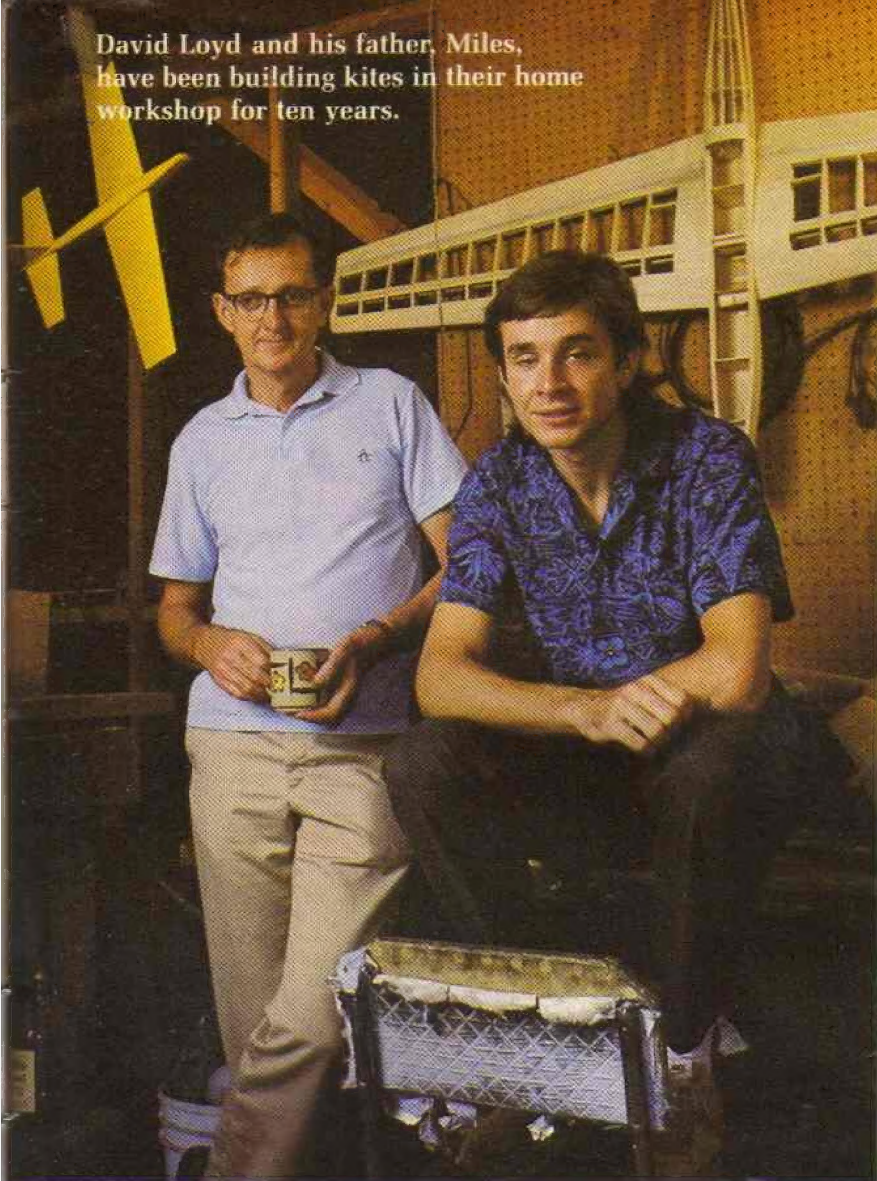
David is 23 now and still working on kites

Above: The orange kite is part balloon, too. It is used to study weather and to check air pollution.

Right: Here, the orange kite tests air pollution over the Denver skyline. This kite is a tethersonde.



David Loyd and his father, Miles, have been building kites in their home workshop for ten years.



with his father. Based on what they have learned, the Loyds have designed a huge kite. It would be as big as a jet airplane. Flying high above the earth, it could cut across the wind and transmit the wind's energy down to the earth. David and Miles believe their super kite could produce enough electricity for a town of 12,000 people.

The Loyds can't build a kite this big by themselves. Now their hobby has outgrown their garage and their family budget. So they're looking for a company which can afford to build their kite. When the first working model is made, the Loyds will find out if their kite can actually generate electricity.

Kites and More Kites

The Loyds' kite is just one example of how modern kites may be able to help people. And even more way-out kites are now being designed. One future kite is actually out of this world. It will fly upside down from the space shuttle. From there, the information the kite collects will help scientists to study air pollution and to predict earthquakes.

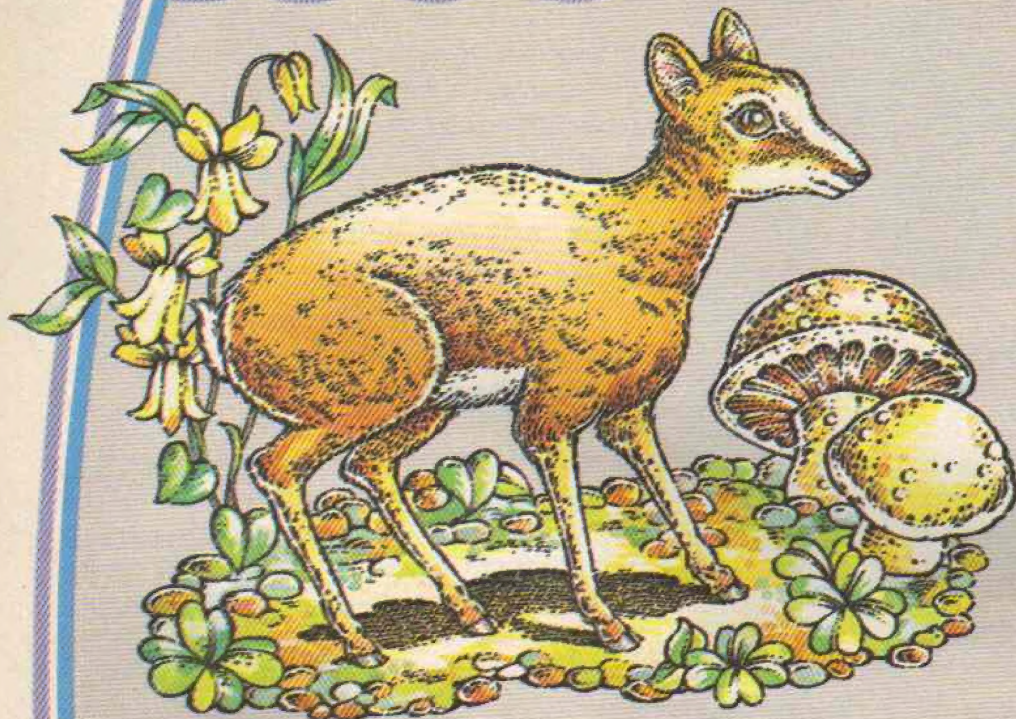
So the next time you see a kite, take another look. It's basically a simple gadget. But its design can be made into many different models. And isn't it amazing that kites can have lots of serious uses, but still be so much fun?



Left: David Loyd tests the kites that his father builds. One of their kites may be able to harness wind power and produce electricity.

Factoids

A typical
10-year-old is
4½ feet tall
and weighs
71 pounds.



The smallest deer in the world is the mouse deer of Asia. It is only about 10 inches high.

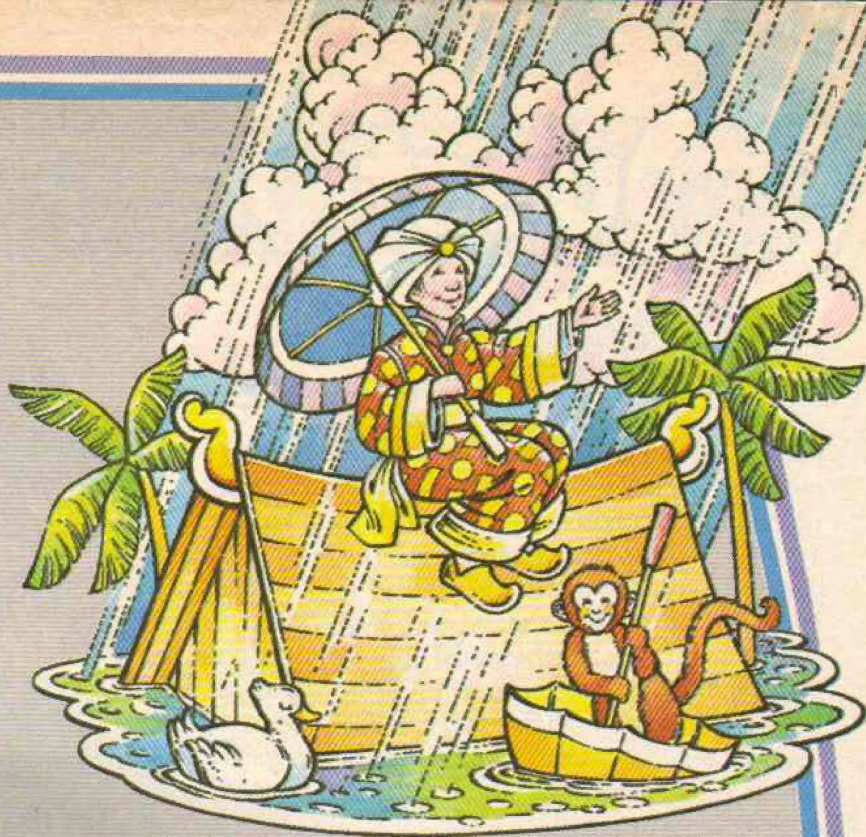


The average American family of four
washes about
30,000 dishes, pots
and pieces of
silverware every
year.





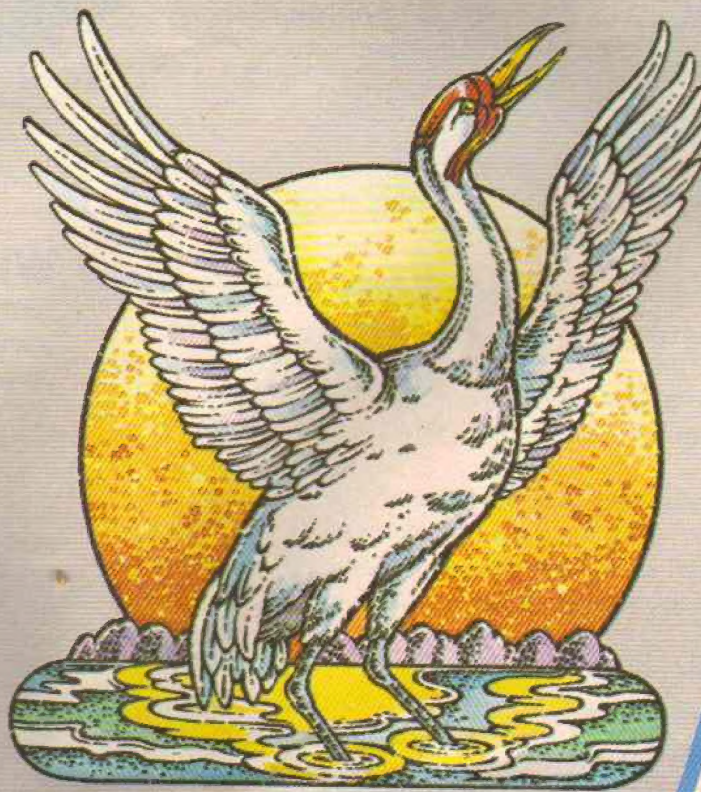
On July 29, 1979, Martin Moore of Brighton, England, ate 2,380 baked beans, one at a time, in a half hour—a record!



Six feet, two inches of rain fell in just one day on March 16, 1952, on the island of Réunion in the Indian Ocean. That's a world record.



The first spacewalk, by a Russian cosmonaut on March 18, 1965, lasted 20 minutes.



The loudest bird in North America is the whooping crane. Its cry can be heard from three miles away.

Any Questions?

by Susan Meyers

How do mirrors reflect? Most mirrors are pieces of glass, coated on one side with a silver color. But polished metal—such as a toaster or a spoon—can act like a mirror, too. You can even see yourself in the surface of a pond.

What the toaster, the spoon and the pond have in common with the mirror is that they are shiny and smooth. When you see yourself reflected in them, you are really seeing light waves. Light bounces off you and onto the shiny object—like the mirror. Then that same light bounces off the mirror and into your eyes. You see yourself.

With a regular mirror, what you see is pretty much what you look like. But if you have ever been to a fun house, you know that mirrors can sometimes do some pretty weird things. Fun house mirrors are curved. When light hits them, it bounces back at crazy angles. As a result, you see some strange and wonderful shapes, instead of the real you.

Question sent in by Michele Plotnik, Skokie, IL.



What are blisters? A blister is one way your body protects itself. You may get one when you wear tight shoes that rub your feet. Blisters also pop up when you get burned by the sun or a hot stove. You can even get them from a bad case of poison ivy or running a high fever.

In each case, an area of your skin becomes sore or damaged. A clear liquid that comes from your blood moves in to cover the injured spot. That's a blister—a little pocket of liquid. It forms between the tough outer layers and the delicate inner layers of your skin. The blister protects the sore area and helps it heal.

You might be tempted to pop a blister, but don't! That blister is your body's way of helping itself. So, put some petroleum jelly on the blister and cover it with a bandaid. That might keep the blister from bugging you. Once the injured skin heals, the blister will disappear.

Question sent in by Diana Wallo, Wayne, NJ.



Do you have a question that no one seems able to answer? Why not ask us? Send your question, along with your name, address, and age, to:

Any Questions?
3-2-1 CONTACT
P.O. Box 599
Ridgefield, NJ 07657

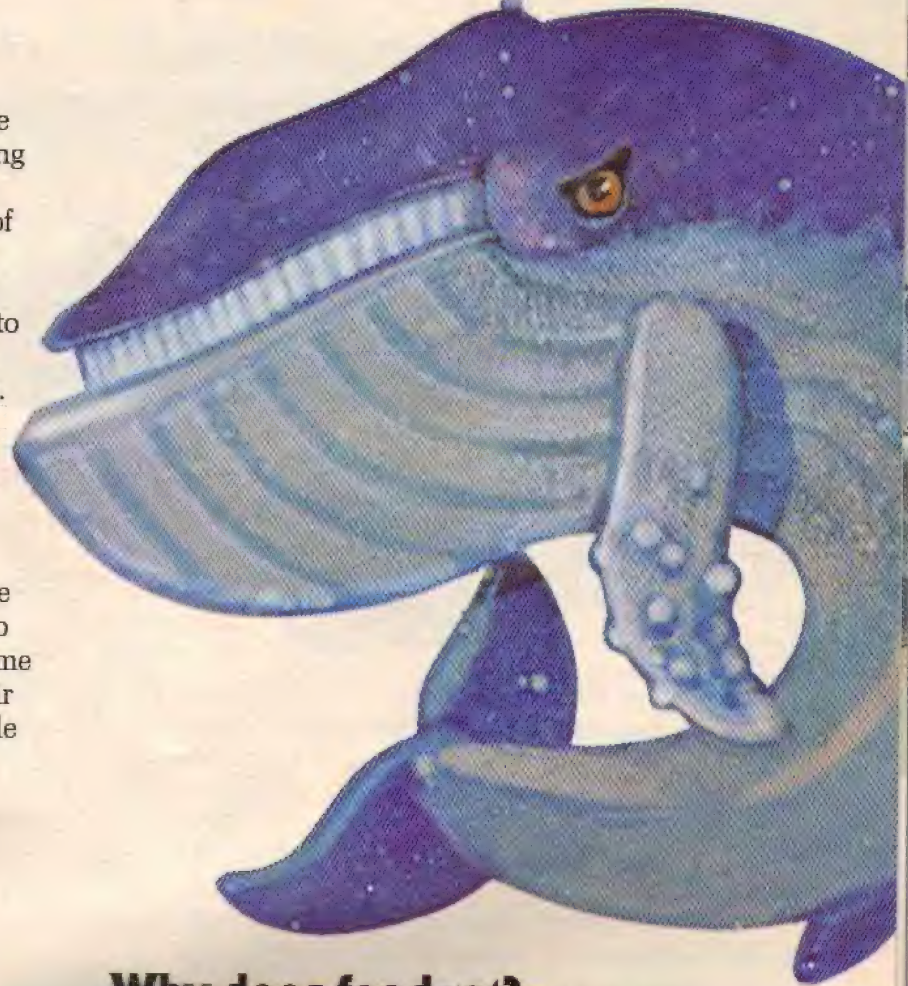
Why do whales spout? "Thar she blows!" was the cry of the lookouts on old whaling ships. They were telling the crew that they had spotted a whale. The spout of water coming out of the animal's head had given it away.

Whales can stay under water a long time. But, like all mammals, they must come to the surface to breathe air. Instead of a nose, a whale breathes in and out through a *blowhole* on the top of its head.

As a whale surfaces, water splashes into the sunken area around the blowhole. When the whale blows the used air out of its lungs, this water gets blasted out, too. That's the spout.

If the weather is cold, it's even easier to see a whale's spout. When the warm, moist air from the whale's lungs hits the chilly air outside, it turns to water vapor. What happens to the whale is the same thing that happens when you breathe out foggy air on a cold winter day. Except, of course, it's a whale of a lot bigger!

Question sent in by Kristina Thorp, Bothell, WA.



Why does food rot? Did you ever decide to make yourself a sandwich and find that the bread is covered with fuzzy black stuff, the lettuce is slimy and the tomatoes smell like an old sock? This food is rotten! It's being destroyed by molds and bacteria.

Molds and bacteria are tiny living things called *microorganisms*. They float in the air and are found everywhere. When molds land on food, they grow roots and branches. You may see them as the green powder on rotten oranges or the black fuzz on old bread. When bacteria land, they start digesting the food. They make it mushy. Sometimes molds and bacteria give off a bad smell. That odor is caused by gases they release as they feed and multiply.

Molds and bacteria need warmth and moisture to grow. Foods can be protected from these tiny invaders by freezing, drying or canning.

Sometimes molds and bacteria aren't so bad. In fact, they can be helpful. The mold *penicillin* is used to cure infection. Some bacteria are used to turn milk into yogurt, sour cream and cheese.

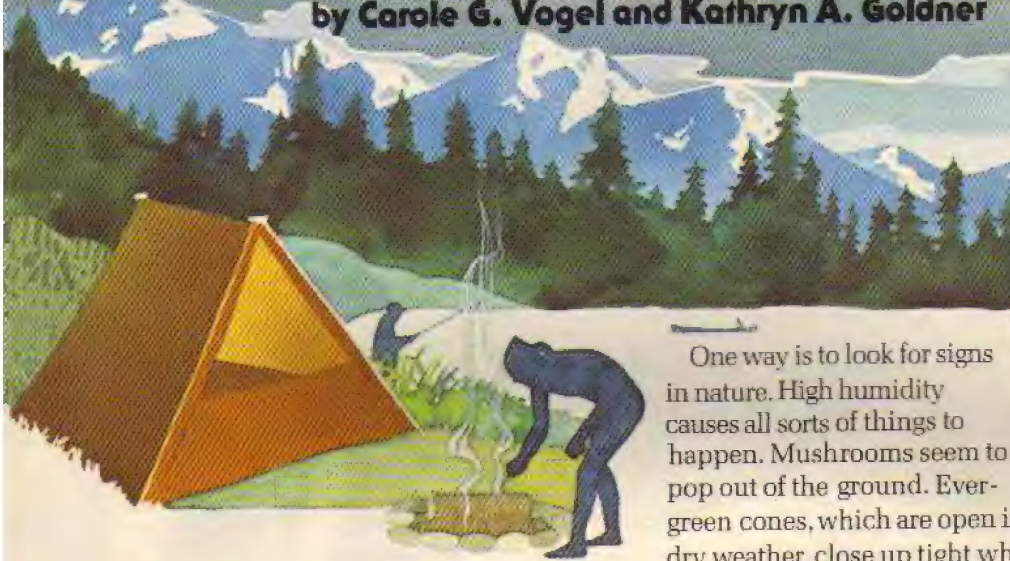
Question sent in by Gary Thompson, Carlsbad, CA.



Rain or Shine?

Be a Weather Predictor

by Carole G. Vogel and Kathryn A. Goldner



The campfire is smoking. The hot dogs are roasting. What a day for a picnic! Your mouth waters. Your stomach rumbles. But what's the other rumbling sound? Uh oh, thunder! Before you know it, rain comes pouring down.

Don't you wish you had known rain was coming? If you had known about certain clues, your campfire might have warned you. In fair weather, smoke rises straight up. But when it's about to rain, smoke becomes heavy with moisture. So when smoke hugs the ground, rain is on the way.

If you're like most people, you turn on the radio to find out the weather. But you can be your own weather predictor. The world is filled with weather clues . . . if you know what to look for.

Invisible Water

How can you tell if it's raining? Stick your arm out the window. How about if it's going to rain? That's a bit trickier. One clue is *humidity*—the amount of moisture in the air. Sometimes high humidity can be a sign that rain is on the way. But humidity is invisible. So how can you tell it's there?

One way is to look for signs in nature. High humidity causes all sorts of things to happen. Mushrooms seem to pop out of the ground. Evergreen cones, which are open in dry weather, close up tight when

it's humid. The same thing happens to certain flowers, including tulips.

All those clues are great, but what if you live in the city? Take a look in the mirror. When the air is moist, straight hair becomes limp. Curly hair gets kinky or frizzy. And hard-to-manage hair becomes *impossible* to manage!



Dew it!

You can't see moisture in the air, but you can collect it.

Here's how:

1. Take a small can. (The size that soup comes in.) Remove the paper.
2. Put three ice cubes in the can. Pour in enough water to cover the cubes. Add a few drops of food coloring.
3. Look at the outside of the can. Where did the water droplets come from? Not from inside. That water is blue, red, or whatever color you made it. The drops had to come from the moisture in the air. When water vapor

The Hot and Cold of It

It's a sunny morning. It looks like a great day outside your window. But is it warm or cool? Looking for plants or animals can give you a clue.

A rhododendron is a common plant that reacts to the cold. Look at its leaves. When the temperature is above freezing, they stick straight out. The colder the day, the more the leaves fold down. When the tempera-

ture falls below 20° F (–6°C), they curl up completely—like a closed umbrella.

During warmer months, listen to the katydid for weather clues. This insect calls out its name. When the temperature is 78°F (25°C), you hear its name fast and clear. As the temperature drops, the call slows down. Below 55°F (13°C) the katydid stops calling all together.

The Ups and Downs of Thermometers

The best way of all to tell the temperature is to use a thermometer. Why not make a model one to see how it works? You'll need a small bottle, food coloring, clay and a clear straw.

1. Put an inch (2.5 cm) of water in the bottle. Place the straw in the bottle. The end should be in the water, but not touching the bottom. Firmly press the clay between the top of the bottle and the straw. Make a tight seal so that air can't get out of the bottle.

2. Blow through the straw. When you take your mouth away, water should go up the straw. Blow a few more times until the water in the straw measures about two inches (5 cm) above the clay.

3. Place your thermometer in ice cold water. Watch it for a few minutes.

Then put the bottle in hot water. What happens to the water level in the bottle?

When you stick your thermometer in hot water, the air in the bottle heats up and expands. Since it needs more room, it pushes the water. The water has only one place to go—up the straw.

As temperatures cool, just the opposite happens. The air takes up less space. The water moves into the bottle to fill the empty space. As it does this, the water moves down the straw.



A Blanket of Clouds

Will the temperature soar today? Should you dress extra warm tonight? Check out the sky for a possible answer.

Clouds in the sky have an effect on temperatures. They blanket the sky and act as a kind of natural insulator. At night they help trap heat near the warm earth. So the temperatures are a little more moderate. By blocking the sun, they prevent the earth from warming up as quickly. So the day will be a little bit cooler.

cools, it *condenses* and forms droplets. The same thing happens on cool nights. That's why dew forms on grass, spider webs, windows and just about everything else.

4. Now add salt to your can. Stir and stir. A few minutes should do the trick. Wipe off the outside of the can and wait a few seconds.

5. This time, frost forms. The salt in the water allows the inside to get extra cold. When the temperature goes below freezing, the moisture collects on the outside of the can and turns to frost or ice.



Don't Let the Pressure Get to You!

Every day you are under pressure—invisible air pressure, that is. Usually you can't feel the weight of the ocean of air above you. But have your ears ever popped while riding in an airplane? That's a sign that your body is adjusting to a change in air pressure.

What has all this got to do with the weather? A lot more than you might think. As long as air pressure stays the same, the weather usually will, too. But a change in air pressure is a signal that a new air mass is moving in overhead.

Rising or increasing air pressure often means that warmer, dry air is coming. So the weather will be fair. Lower or falling air pressure usually means that cooler, moist air is on the way. Better break out the umbrellas! Rain is on the way.

Sometimes your nose can help you detect a drop in air pressure. Ever hear someone say that "it smells like rain"? In low pressure, odors escape into the air more freely. So everything from flowers to chocolate cake seems to smell stronger.

Easy Barometer

If you have done everything we have told you so far, this activity should be a breeze. You can turn your

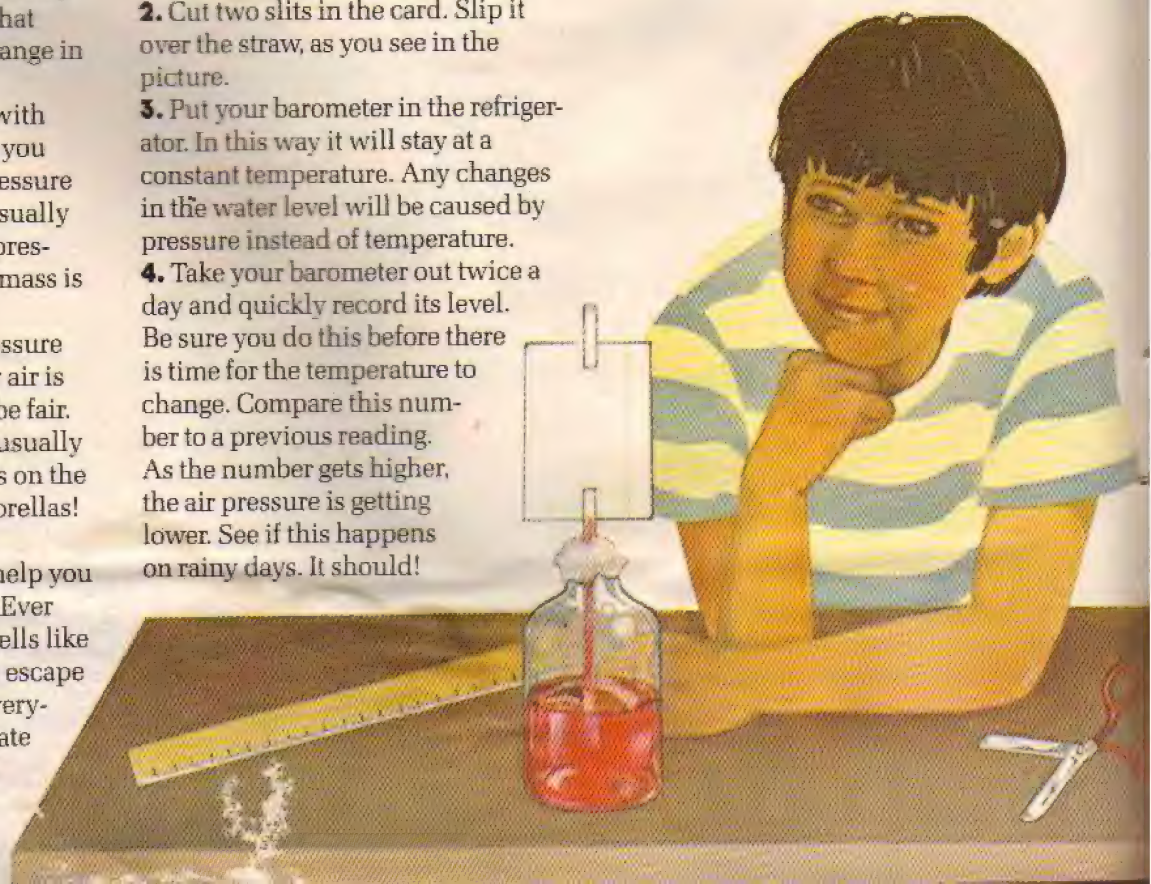
model thermometer into a barometer. This gadget measures changes in pressure. All you need is an index card, pencil, scissors and ruler.

1. Draw a four-inch (10 cm) line on the card. Mark off each quarter inch (.6 cm). Beginning at the top, number the marks from 0 to 17.
2. Cut two slits in the card. Slip it over the straw, as you see in the picture.
3. Put your barometer in the refrigerator. In this way it will stay at a constant temperature. Any changes in the water level will be caused by pressure instead of temperature.
4. Take your barometer out twice a day and quickly record its level. Be sure you do this before there is time for the temperature to change. Compare this number to a previous reading. As the number gets higher, the air pressure is getting lower. See if this happens on rainy days. It should!

Sky High Weather Predictors

Signs in the sky can help predict the weather. One of the most beautiful sky sights can also tell you about the weather. All you have to do is watch the sun set.

The setting sun in the western sky shines through dust and moisture. The result is a kaleidoscope of colors. Because most weather changes come from the west, these colors provide clues that can help predict the next day's weather. The chart here shows what kind of weather sometimes follows different kinds of sunsets.





Sky Sign Reason for It Prediction

| | | |
|-----------------------|---|---------------|
| blue or purple sunset | medium amount of dust and moisture | clear weather |
| pink sunset | lots of dust particles; little moisture | clear and dry |
| deep red sunset | lots of dust and moisture | rain and snow |
| gray sunset | lots of water droplets | rain or snow |
| bright yellow sunset | dry air without much dust | clear weather |

Written on the Winds

Leaves rustle. Trees sway. Clouds drift across the sky. Wind pushes them all. From gentle breezes to stiff gales, winds are just moving air.

Air moves because of differences in temperature and pressure. What causes the differences? Would you believe the sun? The sun heats the earth's surface. The heat is then conducted to the air above. Land surfaces heat faster and get warmer than lakes and oceans. So air over land is warmer than air over water. When warm air and cold air meet, hold onto your hat! The colder, heavier air sinks. The warmer, lighter air rises. Whoosh! Here comes the wind.

You can see how this works for yourself. Just open the freezer door. Put your hand below it. You can feel the cold air moving down. Hold your hand above the freezer. There's no cool air at all. After your parents finish cooking dinner, repeat this experiment using the warm oven. Which way does the air move? You guessed it—straight up!

Feather Predictors

Many animals are sensitive to changes in the weather. By watching their behavior, you can sometimes make correct predictions about the weather. Birds are a good example. Here are some of the ways they tell you about the weather.

1. Birds fly low before rain because of low air pressure.
2. High pressure allows birds to fly higher. This is a sign of clear weather.
3. Some birds, like pheasants and peacocks, call loudly before a storm.
4. Some sea birds, such as gulls, come to land when bad weather is approaching.
5. To trap their body warmth, many birds ruffle their feathers in cold weather.
6. When geese fly south, the weather will turn cold. When they fly north, it's getting warmer.



List of the Month

Blowing in the Wind

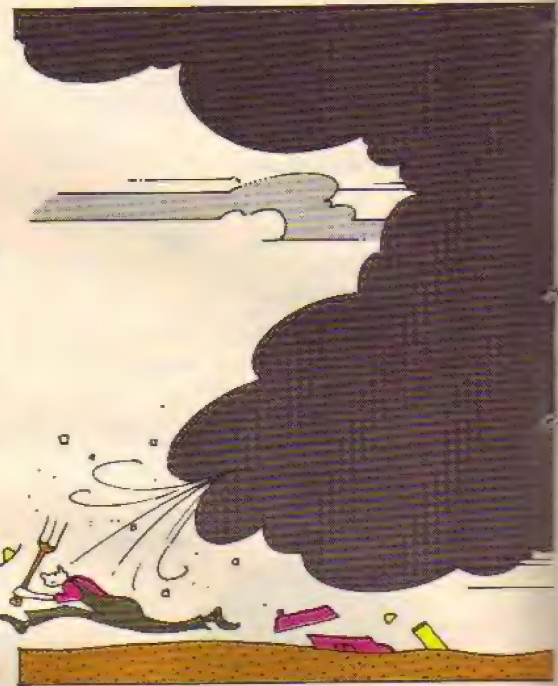
by Renée Skelton

A wind is a wind, right? Not quite. There are special kinds of wind that do amazing things. Here are eight air-raising examples!

Up and Away Ground heat can cause columns of warm air, called *thermals*, to rise into the sky. You can often tell where thermals are because of the puffy clouds that form on top of them. Airplane passengers feel the air puffs as bumps. One parachutist felt thermals another way. They were so strong they kept him bobbing up and down in the sky for several minutes before letting him float safely to the ground.



Hot Stuff When it's a warm winter day in Los Angeles and you can see for miles, the Santa Ana is probably blowing. This dry, warm wind from the mountains near the city blows away smog and clears the sky. But it also dries plants already parched by summer heat. That makes the plants easy to set on fire. When fires start, a strong Santa Ana spreads the flames, causing destruction of forests, homes and loss of life.



Summer Showers Farmers in southern India like the summer monsoon. This moist wind off the sea brings rain for their crops. But the people of Cherrapunji, India, must think they are getting too much of a good thing. Cherrapunji is in the highlands where clouds brought by the monsoon wind dump most of their rain. Cherrapunji gets about 37 feet (11.4 m) of rain a year!



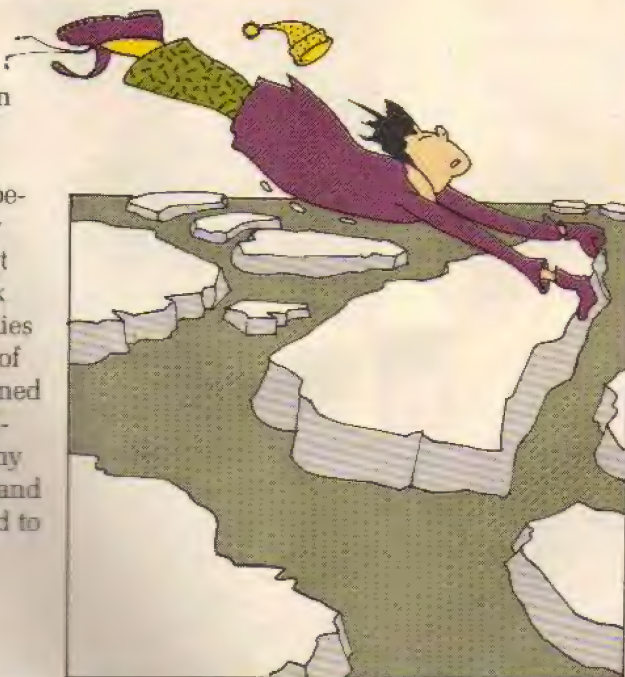
Streaming Along Jet streams are fast-moving bands of air high in the atmosphere. Above the U.S. one blows west to east at 200 miles (241 km) per hour. The stream makes flying from New York to Los Angeles take longer than flying from Los Angeles to New York! Why? Going toward New York, the jet stream pushes behind the plane. Going the other way, it blows against the plane, slowing it down!



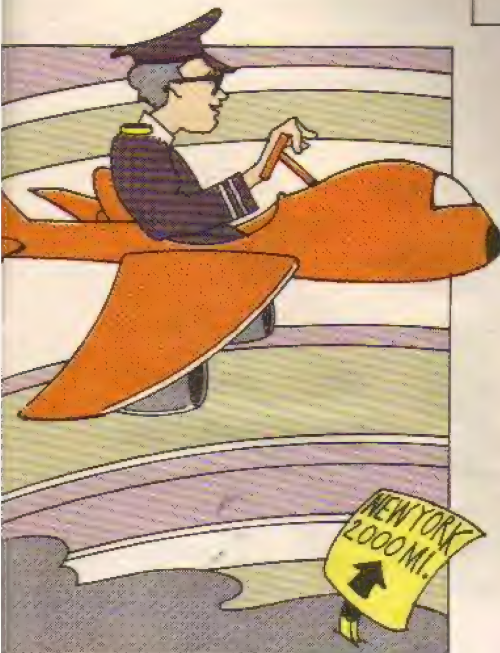
Red Rain Who ever heard of red rain? Lots of people in Italy and Greece. It comes with the moist, warm wind called the gharbi (GAR-bee). This wind starts as hot dry air. As it blows across the Sahara Desert, it picks up red sand. Then it blows over the Mediterranean Sea, picking up moisture along the way. Finally the wind gets to southern Europe. There it dumps its load of water and red sand as—what else?—red rain.



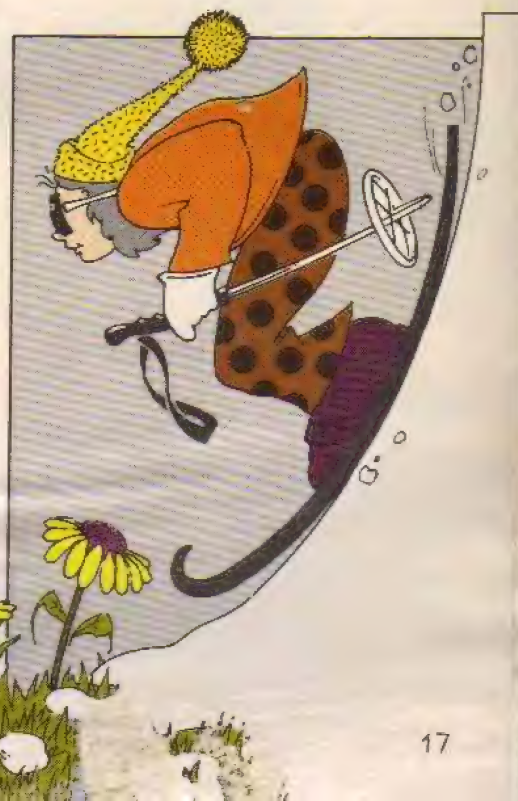
Black Blizzard In dry areas, a strong wind can turn into a dust storm. Some of the worst are called black blizzards because soil picked up by fierce winds forms giant dust clouds. They block out the sun and turn skies black at midday. Many of these "blizzards" happened in the 1930s in the Midwest. The soil from many farms was blown away and thousands of people had to abandon their homes.



Breeze Freeze Antarctica is a pretty unpleasant place. And one of its worst parts is Cape Dennison. Not only is the place freezing cold, but on the average, it's the windiest spot on earth! High pressure cold air is in the middle of Antarctica. Warmer, lower pressure air is along the coast near Cape Dennison. The great rush of air from higher to lower pressure causes the constant high wind.



Snow Eaters People on the eastern edge of the Rocky Mountains are familiar with chinooks (shin-NOOKS). These warm, dry winds sweep out of the Rockies and send temperatures soaring—up to a 40°F (22°C) change in 15 minutes! Because a winter chinook can bring unusual warmth, this wind is nicknamed "snow eater." A strong chinook can melt a two-foot (.6-m) snowfall in just one day!



Contact Report

Fever Ring Can you imagine taking your temperature on your finger instead of under your tongue? Robert Kall, from Bensalem, Pennsylvania, has invented a way to do that. It's a fever ring.

The ring looks like a tiny clock. But instead of numbers, it has little chips which can measure changes in temperature. They show changes as small as half a degree Fahrenheit.

This ring really isn't meant to make taking your temperature easier, though. It is for certain kinds of people who need to keep track of the smallest changes in their body temperature. Take athletes in training, for example. A rise in their temperature can mean they're working too hard. And for people who get migraine headaches, a change in temperature can warn that a headache is on the way.

By keeping an eye on their fever ring, says Dr. Kall, these people might learn when to take it easy. Now that's a hot idea!

—Written by Rebecca Herman



This ring can be used to take your temperature.

Have a Ball! Some kids in Centereach, New York, are really tied up with their school work. They are trying to collect enough yarn to stretch all the way to California.

The project got started a year and a half ago. Some fifth grade kids learned that the U.S. is about 3,000 miles (4,287 km) from coast to coast. Constance McNaughton, their teacher, asked if they could collect something that reached that far.

The students began making a ball of yarn. They advertised for pieces of yarn at school. Sometimes they got samples at garage sales. Soon the ball was big enough to stretch 100 miles (160 km). It weighed 150 pounds (68 kg), as much as a full-grown person.

Each year, new students will add to the yarn project. Mrs. McNaughton predicts that by the year 2031, it will be finished. Kids who first began the work will be 59 years old by then. And their finished project should be one huge ball of yarn!

—Written by Rebecca Herman

Information for this story was sent in by students at the Oxhead Road School, Centereach, NY.



Contact Report

Snakes Alive! Karen Monroe won a race in San Francisco last year. But she never ran a step. Actually, Karen's borrowed snake won the race. It didn't exactly run, though. It slithered.

Each March for five years now, the city's Steinhart Aquarium has sponsored a snake race. Only kids and non-poisonous snakes are allowed to enter. Some kids bring their own snakes. Others borrow free ones from the Aquarium. The track is a 10-foot (3-m) table covered with sand.

Snake racing is a strange sport. Most snakes move very slowly. And like other cold-blooded animals, they become even less active when they're cool. Kids who have raced before say it helps to give their snake a warmup. They hold their racer inside their jackets until right before the race begins.

As for last year's champ, Karen Monroe will be back to defend her title in this year's race. This time, she may even bring her own snake.

—Written by Bill Auda



Karen Monroe cheers as her snake wins a race.

Better Than a Bandaid Crash—another bike accident. But an active kid like you has to put up with bandages and a little bleeding, right? Maybe not.

Now there's something new that may quickly help to stop your cuts from bleeding. Best of all, this product doesn't hurt when it is pressed against your cut. It's a gauze pad called Thromb-Aid.

The gauze pad is soaked in a protein that comes from cow's blood. When a doctor applies the pad, it speeds up the body's natural clotting. The flow of blood stops in 30 seconds.

For now, Thromb-Aid is used only by doctors and hospitals. But the inventor, Dr. John Altshuler, hopes it will soon be available for home use.

—Written by Carol Costello

What's That? Did you read about some kid who invented an electric nosewarmer? Or one who set some new science record? Then cut out the newspaper or magazine story and send it to us. If we use it, we'll send you a CONTACT T-shirt. Be sure to include your name, address, T-shirt size and the name of the newspaper or magazine. Write to: **The Contact Report**

P.O. Box 599

Ridgefield, NJ 07657 19



A new gauze pad can help to stop minor bleeding.

321 CONTACT

P O S T E R





खिलाड़ी जीतें!

A HELPING HAND

by Anita Borgo

A little raccoon stands on its hind legs. It is sniffing confusing smells in the air. The dark woods nearby are scary. The animal is frightened. This little raccoon's mother has gone. The baby was found, hungry and injured, near its home in a hollow oak tree. Luckily, the person who rescued it is Sally Joosten.

If you visit Sally's house in Illinois, you will see that this baby raccoon isn't her only animal house guest. You might find a fox in the backyard or even a rabbit in the kitchen. These animals are not her pets. They are wild animals. They're only living in Sally's home temporarily. It is her job to take care of them until they can survive in the wild.

Sally is a wildlife rehabilitator (re-ha-BIL-uh-tay-tor). She works for the McHenry County Conservation District. She takes care of sick and injured wild animals until they recover. She also helps young orphaned animals like the raccoon until they learn to care for themselves.

The Perfect Job

For Sally, working with animals is the perfect job. When people ask her how she got started, she tells them that she didn't go to



Sally Joosten helps wild animals that get sick or hurt. This red hawk is one of many animals that she rescued.



The young red fox wears a bandage because its leg is hurt. Sally will take care of the fox until it gets well. Then she will let it go back to the woods.

FOR WILDLIFE



Left: This gray fox isn't like most wild animals that Sally helps. For a long time, it was kept penned up illegally. It lost its skills at taking care of itself. So now the fox will have to go on living with Sally.

special schools. She began by taking care of orphaned wild rabbits when she was a young girl in Wisconsin. "I found out I had a knack for it," she says. "I was good at it and I really helped the animals." Sally learned most of what she knows by reading and by talking to veterinarians and other experts who work with animals. Just as important is her first-hand experience. Over the years she has cared for more than 5,000 animals. Many people now consider Sally an expert, too.

Sally's many house guests keep her busy. You might find her crushing insects to feed dozens of hungry young birds. They eat six to eight times an hour. Or she might be gluing new feathers into the hollow broken ones of a crippled owl. You might even find Sally out in a row boat rescuing an injured deer.

Each year, between 800 and 1,000 sick and orphaned animals end up with Sally. She finds some herself. Others are brought to her by people in McHenry County. Sally and her volunteer helpers work with the animals until they're grown and healthy. Then she releases them in a field or forest.

A lot of Sally's time is spent helping baby animals. Finding ways to teach them what they'll need to know to live on their own is a challenge. Once she had to train some fish-eating baby birds, called herons, to catch food for themselves. She put some dead minnows in the water of a small plastic pool. The herons caught the little fish easily. Then Sally tried placing live fish in the pool. With practice, the little herons learned to catch them, too. When she finally released the birds, Sally was sure they knew how to catch food for themselves.

Sally often shares her home with animal orphans. In the spring, for example, she sets up a row of lunch boxes in her house. But the boxes don't hold a row of sandwiches. Instead, ➡



Sally feeds a baby squirrel which lost its mother. It is one of many orphan animals that Sally feeds.



These little birds were blown from their nest. They are fish eaters called herons. When their mother didn't return, Sally taught them to catch fish for themselves.

they contain baby squirrels that have been separated from their mothers. The lunch boxes make warm, snug homes. As the little squirrels grow, Sally moves them to larger houses. She also makes sure they get plenty of practice climbing trees. They learn the sights, sounds and smells of the woods. By the time the squirrels are old enough to go out on their own, they're also ready to take care of themselves.

Crooked Teeth and Braces

Some animals have problems that Sally can't handle alone. So she gets help from other animal experts. She may turn to a veterinarian or even a dentist.

Once a gray squirrel named Scooter had a special problem. He had fallen from a tree. His teeth were so crooked that he couldn't crack nuts. Unless they were straightened, Scooter would never be able to feed himself.

Luckily, a dentist stopped by to bring Sally some rabbits to care for. She told him about Scooter's crooked teeth. So he fitted the squirrel with braces. In a few months, Scooter's teeth were straight, and he was back cracking

nuts in the forest.

What to Do With a Baby Animal

Sally often visits schools to share with kids some of the things she's learned about wildlife. For example, she advises people not to take home baby animals that look like they're lost. Often, the animal is not really lost. "The mother may just be away looking for food," she says. "Watch the animal first to see if the mother returns. A baby animal should only be moved if it is really alone and hungry."

Sally also tells people that wild animals should not be kept as pets. Even for a trained person like herself, a wild animal can sometimes be dangerous. Once Sally was bitten by a baby deer while she was giving it a pill. Another time, a hawk dug its claws into her hand while she was sharpening its beak.

In Illinois and many other states, it is illegal to keep wild animals. So for people who find wild animals in trouble, it is best to contact someone from the local conservation district. An expert like Sally will know what to do.

If you're an animal lover who dreams of



doing work like Sally's, she says your first step should be to do volunteer work. A zoo would be a good place. So would a veterinary clinic or wildlife rehabilitation center. This is a good way to learn about animals and to find out if you really like working with wild ones. The job is different from taking care of your pet. Wildlife rehabilitators must always remember that the real home of the animals they help is in the wild.

"To become a rehabilitator," says Sally, "you have to love the animal enough to let it go. You can take an animal out of the wild, but you can't take the wild out of the animal."

Left: Every day, this great horned owl perches on a scale to get weighed. Sally must keep records on all the animals she is helping. Her records show whether an animal is gaining weight and growing well.

Below: Sally sometimes helps big animals, too. Here, she and a helper carry an injured deer on a special stretcher. It protects the deer from getting hurt any worse.



Make a Trash Bag Kite

Now that windy weather is here it's a good time to fly a kite. What, you don't have a kite? Here's a way to make one of your own.

What You Need

A big plastic trash bag. It must be at least 24 inches long and 16 inches wide.

Two sticks or kite dowels. Each should be 24 inches long and $\frac{1}{16}$ inch wide. They can be round or square. You can get kite dowels at a kite store, toy store or even a hardware store.

Ruler

String

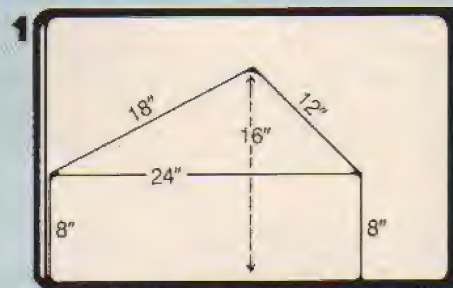
Pen or waterproof marker

Tape and glue

Scissors

1. Make your pattern.

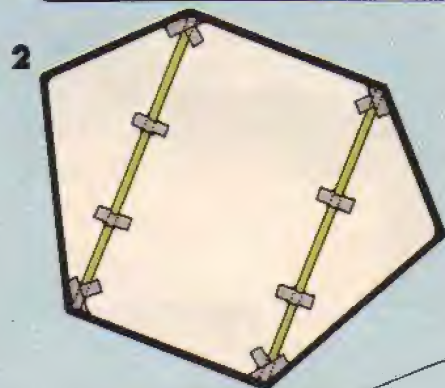
Turn the bag so that the long edge is at the bottom. On the bag, draw the little house shape you see here. Use these measurements. You have outlined half your kite.



2. Cut out your kite and attach the sticks.

Cut out the pattern through both sides of the bag. Do not cut along the 24-inch fold. Now unfold the pattern and you have a whole kite. Both sides are perfectly equal. That will make the kite fly better.

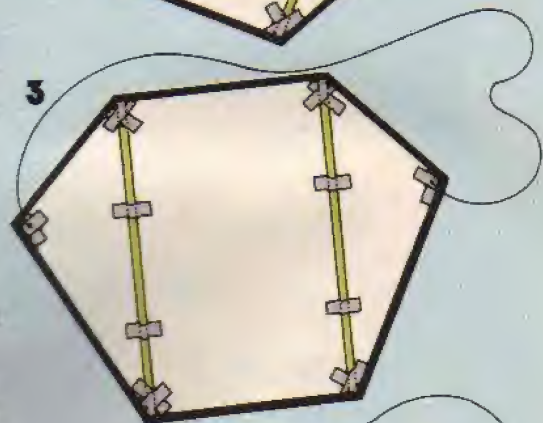
Glue the dowels to the kite as in the picture. Let the glue dry. To make sure the sticks won't fall off, tape them, too.



3. Making and attaching the bridle.

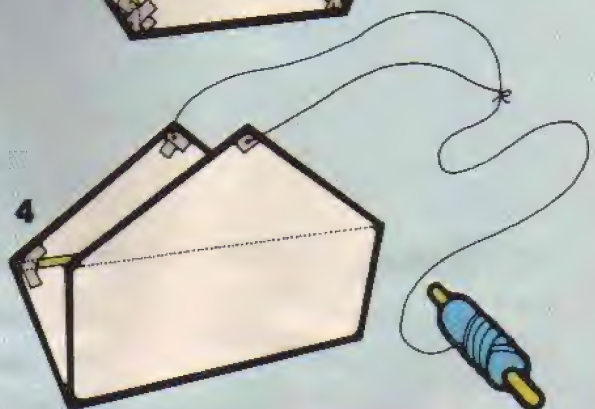
You're almost ready to fly your kite. But first you need something to attach the long kite-flying string to. That's what the bridle is for.

To make the bridle, cut a piece of string six feet long. Then put tape on the two points of the flaps. Punch a hole through the two taped points. Tie one end of the bridle string through one hole and tie the other end through the other hole.



4. Attaching your kite-flying string to the center of the bridle.

To attach the string, you have to find the center of the bridle. To do so, bring the kite flaps exactly together. Keeping the flaps together, pull up the bridle. Make a mark on the string right in the center. Now attach the string to the center of the bridle. Tie it with a very tight knot. If you've done everything right, your kite should look like the ones on the next page.





Tails

You can fly your plastic bag kite without a tail. But when the wind is a little strong, a tail will help keep the kite upright and well balanced.

You can attach a tail to your kite with safety pins, tape, staples or by sewing. Just attach the tail to the center of the bottom of the kite, as you see in the picture.

Here are three tails you can put together with scraps around the house. Or use the leftover plastic bag material from your kite. Make each tail six feet long.

Paper Bunches

This is the easiest and quickest tail to make. Draw 10 squares on paper. Each square should be 8 inches wide and 8 inches long. Cut them out. Bunch each square at the center. Then tie it or tape it to a six-foot-long string. Attach the bunches 8 inches apart.

Patch Tail

Cut out patches of material 6 inches long and 4 inches wide. Then cut long strips of material. The strips should be $\frac{1}{2}$ inch wide and one or two feet long. Attach the short ends of the patches to the long strips. Attach the patches 4 inches apart. Then tie or sew the pieces of tail together to make one tail, six feet long.

Wind Cups

You need a lot of patience to make this tail. Make it with paper or plastic cups and string.

First cut out the bottoms of 10 cups. Then, punch two holes on opposite sides of each cup. Then cut 10 pieces of string, each 8 inches long. Tie the ends of the string through the holes on the cup. The string should look like a bucket handle.

Now cut a piece of string six feet long. Thread it through the open bottoms of the cups. Then cut 10 pieces of string, each 2 inches long. With them, tie the cup handles to the long string, 8 inches apart.

GEYSERS

A GAME THAT'S A REAL BLAST!

In this game for two, one player explores a geyser park, trying to get from START to FINISH. But watch out for geysers! The second player will try to stop the first with these hot, boiling fountains. Choose who will be Explorer and who will be Geyser. Explorer uses two buttons as playing pieces. Put them at START. Geyser needs 20 pennies as playing pieces. They are his geysers. With a magic marker, put a dot on the tail side of eight pennies. The eight marked pennies are live geysers. The other 12 are duds. Geyser should hide the pennies so Explorer won't know what he has.

How to Play

1. Explorer goes first. She moves a button two spaces each turn. She may move in any direction—even diagonal and backward. Explorer may not move where there is anything blocking the board. But she may try to move through Geyser pieces.
2. After Explorer moves, it's Geyser's turn.

He will try to block his opponent. Geyser will place any two geysers in Explorer's path. He may use two live geysers or two duds or one of each. If he runs out of pennies, start the game over.

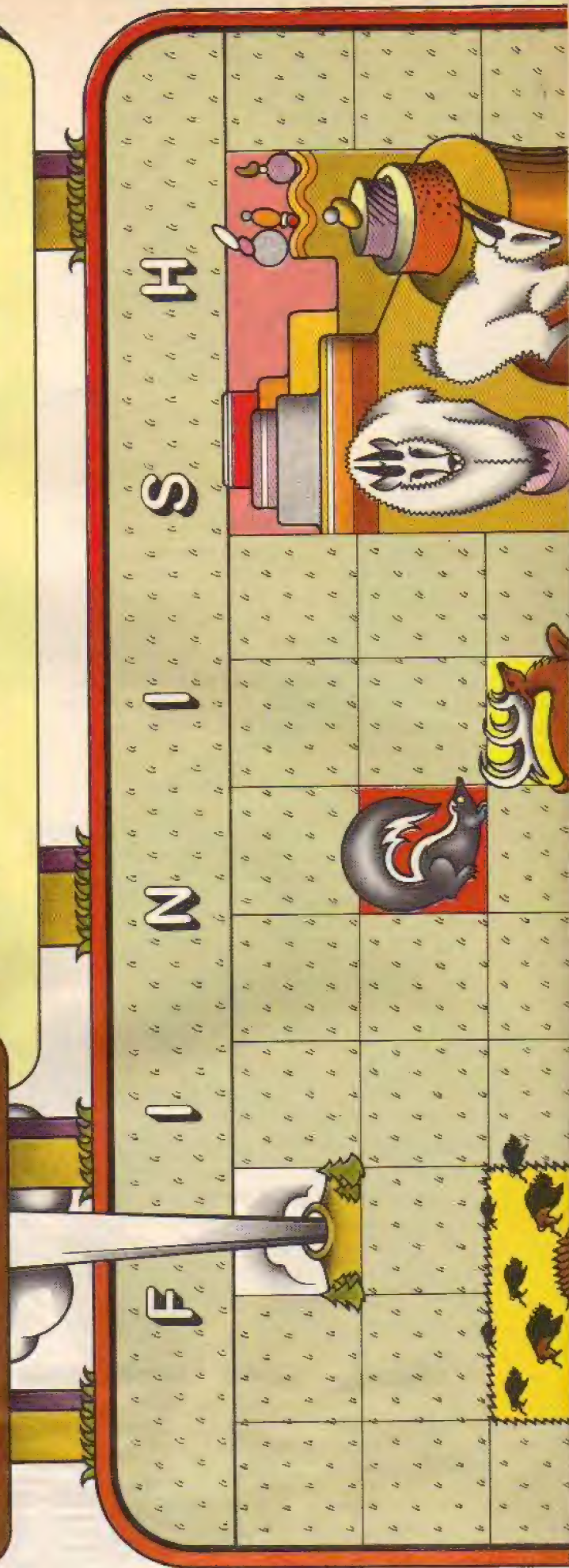
3. IMPORTANT! At the most, Geyser may put two pieces next to each other in a row. That includes diagonal. Three or more pieces in a row aren't allowed.

4. Explorer may try to get through the pieces that Geyser has placed in her way. If she passes over or lands on a geyser, turn it over. If it's a dud, she's safe. But if the geyser has a dot on the bottom, it's a live one. Her button is out of the game. Remove it from the board. After anyone turns over a geyser, return it to the geyser pile.

How to Win

Explorer wins if one of her playing pieces reaches FINISH.

Geyser wins if he traps both Explorer pieces or blows them off the board.





T

R

A

T

S

MAIL

Contest Winners! Remember when we asked for desert survival gadgets? Here are our favorites.



Jul'er Jacobsen, Solana Beach, CA. It will spray water on you as you zoom back to civilization.



Julie Ann Moeller, Madison, WI. The camel car runs on cactus juice. It can go 1,000 miles an hour.



Nicky Laframboise, Toronto, Ontario, Canada. The monster helper gives you food and gets you to safety.



Cynthia Markey, Orange, CA. Just get in and the magic balloon showers you.

Letters

The Facts About Factoids

Dear Contact,

I would like to know where you get your Factoids from. They're very interesting. Thanks for the information.

Roni Clark
Walnut, California

Dear Roni,

Finding our weird little facts is the easy part. Every month we search through books, encyclopedias and magazines for the niftiest little tidbits we can find. The tricky part is making absolutely sure that they are true. We start with about 12 and we carefully double check them. Then we choose the seven best so you can use them to wow your friends, amaze your family and dazzle your teachers.

A Continuing Complaint

Dear Contact,

I am writing to complain about your magazine. The book itself is terrific, but I don't like the Bloodhound Gang stories. It's always in parts and you have to wait till next month to read the rest of the story. By the time you get the next magazine, you have to find your old one and reread it so you will remember what the story is about. Please change this somehow!

Robert K. Ingram
Marion, Indiana

Dear Robert,

We know, we know! It's really a pain to get two- or three-part Bloodhound Gang stories. Nobody likes having to wait a month to find out what happens to Vikki, Zack and Ricardo. So why do we do it?

Actually, in the early days of CONTACT we did have some one-part Bloodhound Gangs. But most of the kids we talked to didn't like them. They thought the stories were too simple. To make them more exciting

we needed to write a lot more. The best way to do this is to let the stories continue for a couple of issues. We do print a summary at the beginning of new parts. In the future, we will print longer summaries. Maybe this will save you the trouble of hunting for old issues.

Quadruple Rainbow?

Dear Contact:

In your June 1982 issue in *Earth Works*, you talked about the rare double rainbows. Well, I saw a rainbow that was quadrupled. There were four of them!

I saw it at a nighttime baseball



game at Three Rivers Stadium in Pittsburgh. We went to a Pirates game and there was a light drizzle. As the stadium lights went on the rainbows appeared one by one. Even the fourth one was bright. It was beautiful!

Melissa Link
Marlboro, Maryland

Dear Melissa,

A gray, wet night at the stadium isn't so good for baseball. But it's great for rainbow watching. Actually, you didn't see a quadruple rainbow, but four separate rainbows.

A rainbow is caused by light that is

bent slightly by water droplets in the air. A rare double rainbow occurs when sunlight bends twice as it passes through raindrops and you are at just the right angle to see both of them.

At the baseball game, there were lights all around the stadium. Each set of lights created its own separate rainbow when it was turned on. And you were at just the right angle to see them all. That's better than seeing a grand slam home run!

Attention Knuckle Crackers!

Dear 3-2-1 Contact,

In one of your issues I read an Any Question about knuckle cracking. I am a knuckle cracker and I have heard that your knuckles get large if you crack them. Is this true?

Cheryl Anker
Hollywood, Florida

Dear Cheryl,

After we printed a question on knuckle-cracking a lot of kids wrote us. Some were afraid that their knuckles would get bigger. Others had been told that cracking knuckles would give them arthritis.

Well, we have done some checking. According to our sources, neither of these things is true. The only problem in cracking your knuckles is driving everyone around you crazy!

We Want Mail!

Dear Readers,

We really love hearing from you. The questions, ideas and complaints we get help us make CONTACT a better magazine. So why not drop us a line? We can't answer every single letter, but we do read them all. Send your mail to:

3-2-1 CONTACT Letters
P.O. Box 599
Ridgefield, NJ 07657

Want more information on some of the things in this CONTACT? Or just some things to do and see for fun? Keep reading!

Volcanoes and Computers

This review was sent in by Deanna Dawson, Nine Mile Falls, WA.

I went to the Pacific Science Center in Seattle, Washington. There were a lot of interesting exhibits on sound waves, volcanoes, optical illusions, there was even a planetarium!

My favorite part was the computers. Each one had a different game that teaches you something.

Been to a science museum? Why not write a review for CONTACT? If we use it you'll get a T-shirt. Send your review, name, address and T-shirt size to:

3-2-1 Contact
Museum Review
P.O. Box 599
Ridgefield, NJ 07657

VOLCANO



Hanger-Mobile

Kites are made to ride on winds high in the sky. Mobiles don't fly. But they move with small breezes that blow through your house. To make a simple mobile you need: a hanger, colored construction paper, scissors, needle and thread.

1. Draw a 2-inch square on construction paper. Cut it out.
2. Use this shape to trace and cut out more just like it. Use different colors of paper.
3. Thread the needle and make a knot at one end. Sew the needle and thread through a corner of one square. Leaving a length of thread, tie the other end to the bottom bar of the hanger. Knot the thread.
4. Repeat this, tying as many squares as you like to the hanger. Vary the size of the string so the shapes hang down to different lengths. You might even try different cutout shapes.
5. Tie a string to the top of the hanger and hang it from the ceiling with a tack. When you open the window, your mobile will move with the breeze.

A Lot of Rot

In *Any Questions?* you learned that microorganisms that cause rotting food are always in the air. To prove it, you need water, two glass jars with lids and two pieces of bread.

1. Put a piece of bread in each jar and sprinkle with water. Leave the jars open for about half an hour.

2. Cover the jars. Put one in the refrigerator, the other in a dark closet. Leave them for a week. Check each day.

You will see black fuzz form on the bread in the closet as it rots. The fuzz comes from tiny microorganisms in the air. They landed on the bread when the jars were left open. With the bread for food, and the warm, moist atmosphere in the jar, conditions were perfect for them to grow.

The bread in the refrigerator will rot also, but not as quickly. Microorganisms don't grow as well in the cold. Now you know why food is kept in the refrigerator!



Previews

Energy Books

In *Earth Works* we tell you how earth's heat can be used to make electricity. If you'd like to learn more about new forms of energy, here are some books to look for at a library or bookstore.

Geothermal Energy This heat

renewable. There are sections on solar, wind, water and your old friend, geothermal. Plus, you'll read about some unexpected places future energy may come from—like ocean waves and tides. This book is published by Franklin Watts.



from deep in the earth causes geysers, pools of bubbling mud and cracks in the ground that hiss steam. Best of all, it can be an important source of safe energy. In this book, Augustus Goldin will tell you of amazing uses for geothermal energy, now and in the future. It's published by Harcourt, Brace and Jovanovich.

Energy: Power for People You have probably heard that some of the old sources of energy—oil, gas and coal—are running out. Find out why, and what you can expect to be using in their place in the future. Laurence Pringle will also give you tips on how to be an energy saver. *Energy* is published by Macmillan.

Alternate Energy Sources This book by Jane Werner Watson introduces some forms of energy that are both safe and



Weather Wonders

If you've read the weather section and you want even more information, send for "What's the Weather?" It's a free pamphlet on weather facts and superstitions. Included is information on how weather affects airplane flights. There's also a chart that shows how to predict weather by looking at clouds. To get a copy, send a stamped, self-addressed business envelope to:

Air France
P.O. Box 10747
Long Island City, NY 11101



3-2-1 Contest

How good are you at solving mysteries? We've got one to test you. Somewhere in this issue of *CONTACT* we've hidden a coin. Not a real coin, just a drawing of one. Look through the issue and try to find it. If you do, write and tell us where it is. The first five letters we pick with the right answer will win T-shirts. Send your answer, name, address and T-shirt size to:

3-2-1 Contest: Hidden Coin
P.O. Box 599
Ridgefield, NJ 07657

The Bloodhound Gang



The Case of the Electronic Burglar

Part One

by Bill McCay

The repairman whistled a cheery tune as he worked on the phone. "Bloodhound Gang," he said as he traced a wire into the wall. "That's an interesting name for a club. What do you do?"

Vikki and Ricardo just looked at him. Finally, Zack answered, "We're detectives."

"Really?" The phone man was quiet for a moment. Then he said, "It's a lucky thing someone reported the phone breakdown in this building. It might have been hours before you found out your phone wasn't working." He started fiddling with the wires that came out of the wall. "Okay. These wires go to the phone. So where do these wires go? Aha!" he said, looking up. "You have that computer over there hooked up to the phone lines."

"That's right," Zack said, looking at the clock on the wall. "Will this take much longer?"

"Just about done, I think," said the phone man. He put the wires together, hooked something onto them and put them all back in the small box in the

wall. "Let's check it out."

He picked up the phone and dialed a number. After a second he said, "That you, O'Hara? I'm done here. See you in a minute." He put down the phone, picked up his tools and said, "So long. May the bugs never bite."

The Gang watched him leave. "What a weird guy," Zack said. "You think he'd have read the sign on our door, 'BLOODHOUND DETECTIVE AGENCY.'?" He went to the phone. "Anyway, now that the phone is working, I'm going to make a call. My friend Janey was supposed to be here by now."

Zack picked up the phone and put it to his ear. Then he put it down. "Boy, was that guy weird. The phone is dead!"

"Let me see," Ricardo said. He picked up the phone and listened. "Nothing wrong here." The phone was humming with the usual dial tone.

"You must have the magic touch," Zack said, starting to dial. A knock came at the door. "Oh, that

must be Janey now."

A Whiz at the Keyboard

Janey was a little taller than Zack. She wore a baseball cap and a bright red T-shirt that said, "I'M A COMPUTER WHIZ!"

"Don't let that T-shirt fool you," Zack said. "She really is a whiz. Janey has written computer programs and sold them to big companies."

"Nice to meet you, Janey," Vikki smiled. "Where did you get together with Zack?"

"We met at the school computer club," Janey said. "Hey Zack, did you hear what some of the other club members did yesterday? They were talking to the main computer down at the bank—asking how much money they had, stuff like that... and nobody knew that they were doing it!"

"That's supposed to be impossible," Ricardo said.

"Hey, computers are just machines with a lot of information. They don't get suspicious if you ask a lot of questions," Janey grinned. "As long as you have the right passwords, a computer will give you any information you want. And if you're willing to work hard enough, you can probably get at any computer."

"You couldn't get into our computer," Zack said.

"Oh, yeah?" Janey laughed. "I'll bet you a free hamburger that I can get at your computer—and you won't even know it till tomorrow. Watch this."

Janey sat at the computer's keyboard and began typing. Line after line of instructions appeared on the computer screen. Then she hit a button. One by one, big letters appeared on the screen.

J...A...N...E...Y. "See, my name is in there already."

"So what are you going to do in there?" Ricardo laughed.

Janey typed new instructions on the keys. The letters on the screen started to quiver back and forth. "I could dance."

Vikki blinked. "Your 'dancing' hurts my eyes."

"I'll stop it," Janey cleared the screen.

Suddenly, more letters began appearing on the blank screen. "Hey, I didn't do that," Janey said.

Vikki shook her head. "That's okay, Janey. It's a message from Mr. Bloodhound."

FINISHED WORK ON THE NEW CODE-BREAKING PROGRAM FOR THE COMPUTER, the screen read. I'M STORING IT IN YOUR MACHINE BECAUSE I'M HAVING TROUBLE WITH MY STORAGE DEVICES. Inside the computer, there

was a loud humming noise. "He's putting it in right over the phone line," Janey said.

THE PROGRAM NAME IS BUSTER—FOR CODE BUSTER. AND THE PASSWORD IS CODE. There was more humming, then the screen went blank.

"Mr. Bloodhound is through," Vikki said. "The computer is all yours." She grabbed Ricardo's arm. "Come on. Let's leave the geniuses to their work."

The Code Disappears

The next day, Zack wheeled a brand-new bicycle into the office. Ricardo whistled. "Where did you get it?"

"I bought it," said Zack with a big grin. "And with my own money. The Bloodhound Gang doesn't get all my brainpower."

"Use your brainpower on this," Vikki said, storming into the office. She had a newspaper in her hand, and was pointing at a headline.

"FOXX DETECTIVE AGENCY WILL USE COMPUTERS TO CRACK CODES..." Ricardo read. "Say, this sounds a lot like the computer program Mr. Bloodhound was working on."

"It sounds just like it," Vikki sat at the computer keyboard. "I'm going to check it out." She typed the words LIST BUSTER and the password CODE.

"Now we should see the program written out on the screen." But all she saw was crazy bunches of letters. "I must have done something wrong," she said. "Zack, you try. You know this computer."

Zack typed, too. But he couldn't get the program either. "Are you sure 'code' is the right password?" he asked.

"It's the password Mr. Bloodhound gave us," said Vikki. "Did anyone change it?"

"I wasn't even near the computer," Ricardo said.

"Not me." Zack shook his head.

"Well, I know I didn't do it," Vikki said. "I don't like this. We can't get at our program, and a rival detective agency comes out with a program just like ours. It sounds like somebody has been spying on us. And worse..." she pointed at the screen. "Not only did they steal our information, they scrambled it so we can't get to it ourselves."

"That's a dirty trick. It will take forever for Mr. Bloodhound to write the program again," Ricardo said.

"It's dirtier than that," Vikki said. "Think for a second. Who has the greatest opportunity to spy around here? Who is in here all the time?" ➤

"Nobody," Zack said quickly.

"Nobody... except us," said Ricardo.

"Why would one of us go spying?" Zack was annoyed.

"For money, maybe?" Vikki said.

Ricardo glanced at Zack's new bike. Zack looked at him, and turned very pale. "Hey," Zack said.

"I didn't say a thing," Ricardo frowned.

"It's what you're thinking that worries me."

"All I can say is I wish you hadn't come in with a brand-new, expensive bike today."

An uneasy silence filled the office as Zack glared at Ricardo. Finally Vikki said, "Come on. Let's get our minds on the most obvious clue."

"My bike?" snapped Zack.

"No," Vikki tapped the newspaper story. "Let's pay a visit to the Foxx Detective Agency."

Mr. Foxx Explains

Mr. Foxx was a little man with bushy red hair and a big smile. The smile disappeared when he heard why the Gang had come to see him. "So you think someone stole this decoding program from your computer?"

"That's what we think," Vikki said. "How did you get your program?"

"I bought it from someone," Foxx said.

"What did he look like?" Zack said eagerly.

"That's what I can't tell you," Foxx sat at his desk.

"As you know, in the detective business, you have sources of... information. Sometimes, those sources don't want you to know who they are. I got the decoding program from a person I've worked with several times, but I've never seen him... or her. I just get a message on my computer. It tells me about a piece of useful information and the price. There's also a place to leave my money, and a place to pick up the information." Foxx ran his hand through his hair. "I've dealt with this person a lot, but this is the first time I had a clue that they were doing anything illegal."

"Will you give us the code-breaking program back?" Vikki asked.

"You said you had no way of proving that it's yours," Foxx said. "I'd like to hold onto it. Tell you what. If I get another message from this source, I'll get in touch with you."

When the Gang got back to their own office, the gloom was thick enough to cut with a knife. No one wanted to suggest that one of the Gang might be a

spy. Zack kept darting angry glances around.

"We've got to face it," Ricardo finally said. "Nobody could get in here at night. We lock the office up, and we have great alarms."

"So somebody had to get in during the day," Vikki said. "Who was here? The telephone man..."

"He never went near the computer," Ricardo said. "Zack, was anyone here after Vikki and I left?"

Zack shook his head. "Nobody. That sort of leaves Janey..." His voice got very quiet. "And me."

"I'd like to ask you something," Vikki said. "What did you mean this morning when you said, 'The Bloodhound Gang doesn't get all my brainpower'?"

"I've been working up computer programs with Janey," Zack said. "We just sold one to a store. That's where I got the money for my bicycle."

"What a minute!" Ricardo exclaimed. "Remember what Janey said about getting at our computer? Do you think this is the way she won her bet?"

"Janey wouldn't steal from us!" said Zack.

Ricardo handed Zack the phone. "Why don't you ask her over here... just in case?"

Janey came into the office with a big grin. "So you caught onto it already, huh? Your computer isn't as safe as you thought."

Zack turned away. "I don't believe it!"

"What I can't believe is how she thinks she can get away with it," Vikki said grimly.

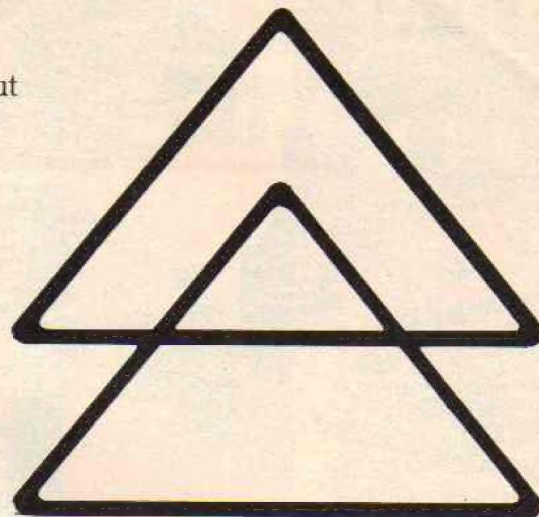
Has Janey stolen Mr. Bloodhound's new program?

Find out next month in the conclusion of "The Case of the Electronic Burglar."



Triangle Teaser

Can you trace these triangles without lifting your pencil from the paper? Don't go over any lines twice. Answer below.



◀ **Did It!**

FRONT COVER: PHOTO ©JAMES BALOG; **P. 2:** PHOTO ©ANITA BORGIO; **P. 4-7:** PHOTOS ©JAMES BALOG; **P. 8-9:** ILLUSTRATIONS ©JOHN NEZ; **P. 10-11:** ILLUSTRATIONS ©DENNIS ZIEMIENSKI; **P. 12-15:** ILLUSTRATIONS ©BARBARA HAMLIN; **P. 16-17:** ILLUSTRATIONS ©DAVID FEBLAND; **P. 18:** (TOP) PHOTO JOHN MCGRIL, DISCOVER MAGAZINE ©1982, TIME, INC.; (BOTTOM) PHOTO ©CONSTANCE MCNAUGHTON; **P. 19:** (TOP) PHOTO ©BILL AUDA; (BOTTOM) PHOTO COURTESY OF AMERICAN HOSPITAL SUPPLY; **P. 20-21:** PHOTO, GAMMA LIAISON AGENCY/©LINDA GORDON; **P. 22:** PHOTOS COURTESY OF THE MCHENRY COUNTY CONSERVATION DISTRICT; **P. 23:** (TOP) PHOTO ©DICK BORGIO; (BOTTOM) PHOTO COURTESY OF THE MCHENRY COUNTY CONSERVATION DISTRICT; **P. 24:** PHOTO COURTESY OF THE MCHENRY COUNTY CONSERVATION DISTRICT; **P. 25:** (TOP) PHOTO ©ANITA BORGIO; (BOTTOM) PHOTO COURTESY OF THE MCHENRY COUNTY CONSERVATION DISTRICT; **P. 26-27:** ILLUSTRATION ©N. JO SMITH; **P. 28-29:** ILLUSTRATION ©GAIL STAMPAR; **P. 31:** ILLUSTRATION ©PAT CUMMINGS; **P. 32-33:** ILLUSTRATION ©ELLIOT KRELOFF; **P. 34:** ILLUSTRATION ©BRAD HAMANN; **P. 36:** ILLUSTRATION ©NEIL WALDMAN; **BACK COVER:** PHOTO ©H. ARMSTRONG ROBERTS, INC.

Thank You! Thanks to the staff of the Go Fly a Kite store in New York City for their help with the kite activity.

Oops! The November issue contained a Contact Report on the inventor of the railcycle. By accident, we made it sound as though Dr. Smart rides his cycle on tracks that are still used by trains. He does not. And he doesn't think anyone else should ever do that, either. Sorry, Dr. Smart.

Next Month!

Here's a sample of what you'll find in the next issue of 3-2-1 CONTACT:

Ribbit!

Find out how much you know about frogs in our hoppin' quiz.

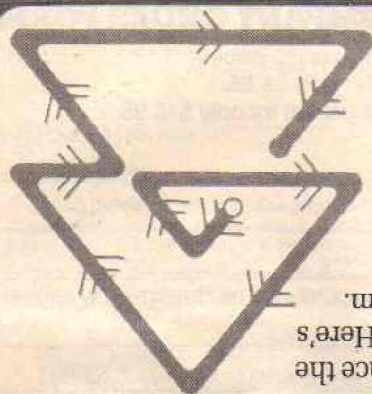
I Forgot . . .

How does your memory work? Read some tips on how you can make it work for you.

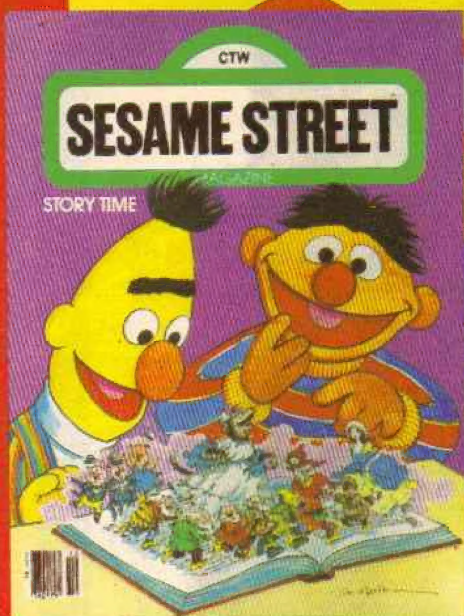
Bloodhound Gang

Will Vikki, Ricardo and Zack solve "The Case of the Electronic Burglar"?

Plus Factoids, Mail, Earth Works and Much More!



Triangle Teaser
There are several ways to trace the triangles. Here's one of them.



For
Ages
2-6

ENJOY *With* SESAME STREET

Sesame Street Magazine—Big Bird and his delightful friends will bring dozens of playful surprises, ten terrific times a year. (It's the entertaining education that Sesame Street does best!) Puzzles, cut-outs, games, A-B-C's, 1-2-3's...there's all the magic of the TV super-series in every colorful issue.

SESAME STREET ORDER FORM

- ☐ Yes! Please send 1 year (10 issues) of Sesame Street for only \$8.95.
☐ I prefer 2 years (20 issues) for only \$16.95.

CHILD'S NAME _____ AGE _____

ADDRESS _____

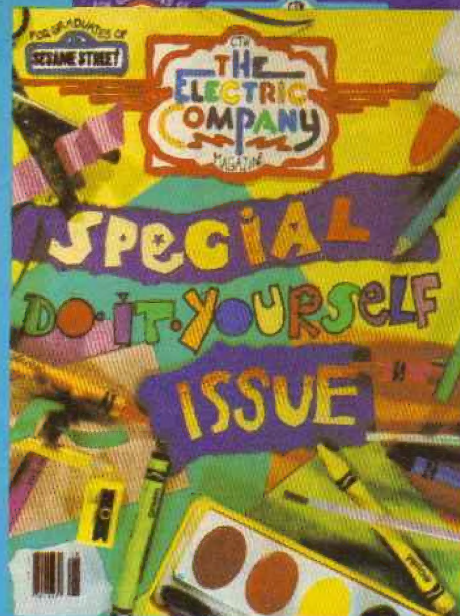
CITY _____ STATE _____ ZIP _____

LIST BILLING NAME AND ADDRESS IF DIFFERENT FROM ABOVE.

☐ BILL ME LATER ☐ PAYMENT ENCLOSED

MAIL TO: Sesame Street Magazine
 P.O. Box 2894, Boulder, CO 80322

Subscription to Canada and other countries, add \$4.00 per year. Please remit in U.S. currency. Allow 6-8 weeks for delivery. 8FC30



For
Ages
6-10

ENTERTAIN *With* ELECTRIC COMPANY

The Electric Company Magazine—as creatively entertaining as the T.V. show kids love. It's amusing, playful, absorbing and educational for beginning and young readers.

Enjoy ten colorful issues filled with puzzles, poster, cut-outs, Spidey super stories, jokes...and sunny smiles.

ELECTRIC COMPANY ORDER FORM

- ☐ Yes! Please send 1 year (10 issues) of Electric Company for only \$8.95.
☐ I prefer 2 years (20 issues) for only \$16.95.

CHILD'S NAME _____ AGE _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

LIST BILLING NAME AND ADDRESS IF DIFFERENT FROM ABOVE.

☐ BILL ME LATER ☐ PAYMENT ENCLOSED

MAIL TO: The Electric Company Magazine
 200 Watt Street, P.O. Box 2922 Boulder, CO 80322

Subscription to Canada and other countries, add \$4.00 per year. Please remit in U.S. currency. Allow 6-8 weeks for delivery. 8FC30

Earthfacts: Geysers

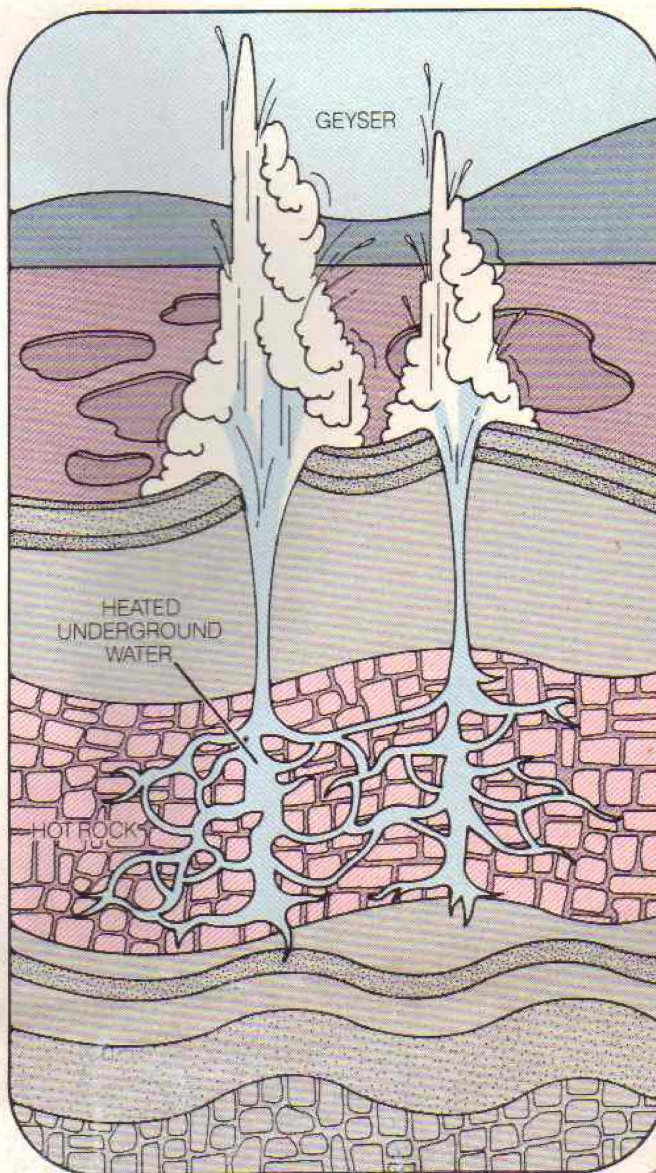
Each month CONTACT will bring you another *Earth Works*. Save these pages in a notebook. Soon you will have your own guide to the wonders of the planet Earth.

- ☉ A geyser is a fountain of hot, boiling water that shoots up from a hole in the ground.
- ☉ Geysers are sources of natural hot water. The heat comes from hot, liquid rock, or magma, found deep underground. When this hot rock is close to the surface, it can heat nearby underground water. If the hot water slowly flows out of an opening in the ground, it is a hot spring. If it shoots out, it is a geyser.
- ☉ Geysers shoot up when pressure created by heat forces water out of the ground. The underground passages that hold the water are close to hot rock. The water in the deepest passages gets heated and turns to steam. Steam takes up more space than water. So it expands and pushes up on the water over it. When the pressure is great enough, water is blown out of the geyser in an eruption.
- ☉ Geysers are rare. The four countries where they can be found are the United States, Iceland, New Zealand and the Soviet Union.
- ☉ The United States' geysers are in Wyoming's Yellowstone National Park. It has about 200 of them, the most of any area in the world.
- ☉ Geyser eruptions differ. Some shoot up hundreds of feet. Others reach just a few inches. Some erupt every few minutes. Others are quiet for years between eruptions. Some shoot into the air for hours at a time. Others last only a few minutes.
- ☉ The largest recorded geyser eruption occurred between 1902 and 1905 at New Zealand's Waimangu Geyser. It sent fountains of boiling water 1,000 feet (300 m) into the air.
- ☉ The heat from deep in the earth that causes geysers and volcanoes to erupt is called *geothermal*. In some places, underground steam and hot water are trapped and used to run machines that produce electric power. The largest geothermal power plant in the United States is called The Geysers. This

EarthWorks

plant, near San Francisco, produces enough electricity to meet the needs of a city of 600,000 people!

Below: Geysers often form where there was volcanic activity. The hot magma that fed the volcano heats underground water. The water is forced out at the surface in fountains of hot water and steam.



EarthWorks



Geysers

This is not the world's largest geyser, but it is one of the most famous. It is Old Faithful, one of the many geysers in Wyoming's Yellowstone National Park. This geyser got its strange name because it has erupted faithfully every 30 to 90 minutes, for at least the last 100 years. Old Faithful's eruptions last from two to five minutes and shoot hot water and steam 165 feet (60 m) into the air.

To find out more about geysers, turn to page 39.

3-2-1 CONTACT
P.O. Box 2933
Boulder, CO 80321

Address Correction Requested

Nonprofit Org.
US POSTAGE
PAID
Glasgow, KY
Permit No. 393

430492 CNL 0109A091 6448 NOV83

MATTHEW CONLIFFE 02*5A
10109 AFTON RD DIR
LOUISVILLE KY 40223